(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 387 965 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication of patent specification : **19.01.94 Bulletin 94/03**

(51) Int. Cl.[5] : **A45B 11/00**, A45B 23/00, A45B 25/14

(21) Application number : **90200600.6**

(22) Date of filing : **13.03.90**

(54) Collapsible ummbrella.

(30) Priority : **13.03.89 NL 8900603**

(43) Date of publication of application : **19.09.90 Bulletin 90/38**

(45) Publication of the grant of the patent : **19.01.94 Bulletin 94/03**

(84) Designated Contracting States : **AT BE CH DE ES FR GB GR IT LI LU NL**

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EP 0 387 965 B1

Description

The invention relates to a collapsible umbrella against for instance sunlight, rain and so on, comprising a shaft pivotally attached to a carrier, a number of ribs fixed pivotally to said shaft for supporting fabric-like material, each of said ribs being pivotally connected to a rod-like stretcher, said shaft having a hollow form and is adapted to guiding a control means partly in the form of a common control rod and partly in the form of a flexible element like a cord connected to the top of said control rod, the bottom end whereof is connected to the stretcher rods, so being displaceable in lengthwise direction of said shaft, and wherein said carrier has a space receiving said control means.

Such a construction (see US-A-4284095) is frequently used in umbrellas and the like, wherein the shaft is provided with a handle and wherein above the handle a sleeve-like slide element is used that is slidable along the shaft and to which is attached the other end of the rod-like stretchers. Likewise known is an embodiment wherein the umbrella is fixed to a central shaft which is provided with a foot, which results in the drawback that the space under the umbrella cannot be fully utilized. The invention is in particular related to such an umbrella in a larger dimension and dispose it in a stationary position, wherein the operation for the user remains very simple, the whole construction is quite sturdy and therefore resistant to wind load and the like.

The umbrella according to the invention is distinguished in that said control rod has a length greater than that of said shaft, and said space in said carrier is adapted to fittingly receive the top end of said control rod in the spreaded position of the umbrella, so locking said pivot inbetween the shaft and the carrier.

This telescopic construction ensures that the space beneath the umbrella is not obstructed by construction parts. Further the control rod will not only guide the ribs, but also provide a locking in the erected position of the umbrella.

In order to assist simple operation a cord or like flexible means is trained via the hollow carrier to the top end of the control rod and fastened thereto. Erecting and locking is herewith effected using the same cord.

The invention is not limited to a single umbrella but can also be applied to a group of collapsible umbrellas provided with a common standard.

The invention is further elucidated in the figure description hereinafter of a number of embodiments. In the drawing:

Figure 1 shows a perspective top view of an embodiment of a single collapsible umbrella according to the invention,

Figure 2 is an upright side view of the different construction parts in collapsed position without the fabric-type material arranged on the ribs,

Figure 3 is a detail of the standard in cross section with the bottom end of the carrier arranged slidably and pivotally thereon,

Figure 4 is an upright section of the free end of the carrier with the standard for the umbrella attached pivotally thereto,

Figure 5 shows a perspective top view of a second embodiment of a group of umbrellas according to the invention provided with a common standard.

The same components are designated in the figures with the same reference numerals.

The umbrella according to the invention consists of a shaft 1, close to the top end of which a number of ribs 2 are pivotally attached. The pivot construction can be embodied in any suitable manner and falls otherwise outside the scope of the invention. In the embodiment shown, see figure 4, it is a ring 3 fixed to the top end of the standard and provided with radially oriented slots 4 into which the top end 5 of a rib 2 can be mounted for pivoting about the pivot pin 6.

The ribs 2 serve to support a canopy of fabric-like material 7. This fabric-like material may also be of any random type, for instance textile or plastic foil, this depending on the use of the umbrella.

Arranged close to the middle of each rib 2 is a second pivot point 8 to which is pivotally attached the one end of a rod-like stretcher 9. The other end 10 of the rod-like stretchers is fixed to a ring 11 which is similar to the ring 3 and which is attached to the bottom end of a control rod 12 arranged slidably in the hollow shaft 1.

The top end of the shaft 1 is fixed pivotally with a pivot 13 to a carrier 14, which has an L-shaped form in the embodiment shown. The short leg 14' of the carrier 14 takes the form of a hollow profile preferably corresponding with the profile of the shaft 1. The long leg 14" of the carrier 14 is suspended on a standard 15. The standard 15 can be fixedly disposed in any random manner, for example by means of a ground anchor pin 16. The standard 15 is provided in the standing side wall with a slot 17, see figure 3, through which can pass a bracket 18 of a slide member 19 slidable in the hollow standard 15. The bracket 18 serves to receive the bottom end of the carrier 14 for pivoting about the pivot pin 20. The slide member 19 in the hollow standard 15 is carried by a flexible element 21 trained around two reversing pulleys 22 and 23, which are mounted in the hollow standard. The flexible element 21 is fastened to the top and bottom of the slide member 19 by means of the eyes 24.

The bottom reversing means 22 is bearing mounted on a shaft 25 which is also provided with a wheel 26 around which is trained a second flexible element 27. This flexible element is also guided round a drive pinion 28 that is fixed nonrotatably to a shaft 29 rotatably mounted in the hollow standard 15, however with one end protruding outside the standard and

with a handle 30 being provided on the free end.

Although the entire mechanism as described above can be mounted separately in the standard 15, the mechanism can also be mounted on a sub-frame in the form of an elongate plate 31, which sub-frame 31 can be fixed in the standard 15 by means of bolts 32.

Referring back to figures 1 and 2 it can be seen that the carrier 14 is attached pivotally at the bottom end to the bracket 18 and is further supported by a bar strut 33 which is coupled pivotally at one end to the top end of the standard 15 by means of a pivot pin 34 and at the other end halfway along the carrier 14 by means of the pivot pin 35.

Finally, it is noted that a flexible element 36 extends from a fixed point 37 on the outside of the standard 15 through the hollow carrier 14 and the shaft 1 to the top end of the control rod 12.

The above described mechanism for erecting and collapsing the umbrella operates as follows:

Starting from the position in figure 2 wherein the umbrella is in collapsed state, by turning the handle 30 and therefore the pinion 28 the flexible element 21 can be turned by means of the transmission mechanism 27 such that the slide member 19 moves upward in the standard 15. The bottom end of the carrier 14 thereby also moves upward along the standard 15 and will gradually assume the position as in figure 1, wherein the carrier extrudes from the standard 15. Because of the fixed disposition of the flexible element 36 on the bottom end 37 on the standard 15 the control rod 12 will be pulled into the shaft 1 as the carrier 14 moves outward, whereby the ribs 2 will begin to erect on account of the outward force acting on the stretcher rods 9. As a result of the pivoting action between the shaft 1 and the short leg 14' of the carrier 14 the shaft 1 remains in vertical position when the carrier 14 moves outward relative to standard 15. The erecting of the umbrella and outward movement of the carrier 14 can continue until the short leg 14' lies in line with the shaft 1, in which position the top end of the shaft 1 closes onto the bottom end of the carrier 14. This position is shown in figure 4. In this position the control rod 12 will also be pulled so far upward by the flexible element 36 that the top end thereof extends into the hollow leg 14' of carrier 14.

In the erected position of the umbrella 1 as in figure 1 the shaft 1 is therefore locked relative to the short leg 14' of the carrier by means of the control rod 12, which prevents the shaft 1 fitting loosely around the pivot pin 13.

The collapsing of the umbrella takes place in reverse sequence, primarily by reverse rotation of the handle 30, causing the slide member 19 to descend and therefore collapsing the carrier 14, whereby the control rod 12 can drop out of the carrier 14, the pivot 13 is therefore released and the umbrella can collapse.

Figure 5 shows an embodiment wherein arranged on the standard 15 are four carriers 14, on each of which an umbrella 7 is suspended. The carriers 14 are up and downwardly movable along the standard 15 in the manner according to figure 1 by means of turning the handle 30, wherein it is noted that the standard displays on four sides a slot 17 through each of which protrudes a bracket 18 on a common slide member 19. It is therefore possible by turning one handle 30 to erect or collapse all four umbrellas 7 simultaneously.

Claims

1. Collapsible umbrella against for instance sunlight, rain and so on, comprising a shaft (1) pivotally attached to a carrier (14), a number of ribs (2) fixed pivotally to said shaft (1) for supporting fabric-like material (7), each of said ribs being pivotally connected to a rod-like stretcher (9), said shaft (1) having a hollow form and is adapted to guiding a control means partly in the form of a common control rod (12) and partly in the form of a flexible element like a cord connected to the top of said control rod, the bottom end (10) whereof is connected to the stretcher rods (9), so being displaceable in lengthwise direction of said shaft (1), and wherein said carrier (14) has a space receiving said control means, **characterized in that** said control rod (12) has a length greater than that of said shaft (1), and said space in said carrier (14) is adapted to fittingly receive the top end of said control rod (12) in the spreaded position of the umbrella, so locking said pivot inbetween the shaft (1) and the carrier (14).

2. Collapsible umbrella as claimed in claim 1, **characterized in that** the carrier (14) is pivotally connected to a standard (15).

3. Collapsible umbrella as claimed in claims 1 and 2, wherein said flexible element (36) is trained via the hollow carrier (14) and the hollow shaft (1) to the top end of the control rod (12), **characterized in that** the other end is fastened to a fixed point on said standard (15).

4. Collapsible umbrella as claimed in claim 3, **characterized in that** the bottom end of the carrier (14) is movable towards and away from said fixed point by means of a slide member displaceable along said standard (15).

5. A group of collapsible umbrellas as claimed in any of the preceding claims, **characterized in that** the carriers (14) are arranged on a common standard.

Patentansprüche

1. Zusammenklappbarer Schirm, beispielsweise zum Schutz vor Sonnenlicht, Regen usw., wobei der Schirm versehen ist mit einer Stange (1), welche schwenkbar an einem Träger (14) angebracht ist, einer Mehrzahl von Rippen (2), welche schwenkbar an der Stange (1) zum Stützen eines textilstoff- oder folienartigen Materials (7) vorgesehen sind, wobei jede der Rippen schwenkbar mit einem jeweiligen stangenförmigen Spannelement (9) verbunden ist, wobei die Stange (1) eine hohle Form aufweist und zum Führen einer Steuereinrichtung gestaltet ist, welche zum einen Teil eine gemeinsame Steuerstange (12) aufweist und zum anderen Teil ein flexibles Element wie ein Seil aufweist, welches an dem oberen Ende der Steuerstange befestigt ist, während das untere Ende (10) der Steuerstange mit den stabförmigen Spannelementen (9) verbunden ist, so daß eine Verlagerung in Längsrichtung der Stange (1) möglich ist, und wobei der Träger (14) einen Raum zum Aufnehmen der Steuereinrichtung aufweist, dadurch gekennzeichnet, daß die Steuerstange (12) eine größere Länge als die Stange (1) aufweist, und der Raum in dem Träger (14) zum Aufnehmen des oberen Endes der Steuerstange (12) in der aufgespannten Stellung des Schirms geeignet ist, um eine Verriegelung des Gelenks zwischen der Stange (1) und dem Träger (14) zu erreichen.

2. Zusammenklappbarer Schirm nach Anspruch 1, dadurch gekennzeichnet, daß der Träger (14) schwenkbar mit einem Ständer (15) verbunden ist.

3. Zusammenklappbarer Schirm nach Ansprüchen 1 und 2, wobei das flexible Element (36) durch den hohlen Träger (14) und die hohle Stange (1) zu dem oberen Ende der Steuerstange (12) verläuft, dadurch gekennzeichnet, daß das andere Ende des flexiblen Elements an einem Befestigungspunkt an dem Ständer (15) befestigt ist.

4. Zusammenklappbarer Schirm nach Anspruch 3, dadurch gekennzeichnet, daß das untere Ende des Trägers (14) zu dem Befestigungspunkt hin und von diesem Befestigungspunkt weg mittels eines Gleitelements bewegbar ist, welches entlang des Ständers (15) verlagerbar ist.

5. Gruppe von zusammenklappbaren Schirmen, wie sie in einem der vorangehenden Ansprüche beansprucht sind, dadurch gekennzeichnet, daß die Träger (14) an einem gemeinsamen Ständer angeordnet sind.

Revendications

1. Parapluie pliant protégeant par exemple des rayons du soleil, de la pluie etc, comportant un arbre (1) fixé de manière pivotante sur un porteur (14), plusieurs baleines (2) fixées de manière pivotante sur ledit arbre (1) pour supporter un matériau (7) analogue à du tissu, chacune desdites baleines étant reliée de manière pivotante à un tendeur (9) analogue à une tige, ledit arbre (1) ayant une forme creuse et étant adapté pour guider des moyens de commande ayant partiellement la forme d'une tige (12) de commande commune et partiellement la forme d'un élément souple analogue à une corde reliée à la partie supérieure de ladite tige de commande, l'extrémité inférieure (10) de cette dernière étant reliée aux tiges (9) formant tendeurs, de manière à pouvoir se déplacer dans la direction longitudinale dudit arbre (1), et dans lequel ledit porteur (14) comporte un espace recevant lesdits moyens de commande, caractérisé en ce que ladite tige de commande (12) a une longueur plus grande que celle dudit arbre (1), et ledit espace situé dans ledit porteur (14) est adapté pour recevoir de manière convenable l'extrémité supérieure de ladite tige de commande (12) dans la position déployée du parapluie, verrouillant ainsi ledit pivotement entre l'arbre (1) et le porteur (14).

2. Parapluie pliant selon la revendication 1, caractérisé en ce que le porteur (14) est relié de manière pivotante à un poteau (15).

3. Parapluie pliant selon les revendications 1 et 2, dans lequel ledit élément souple (36) est tiré via le porteur creux (14) et l'arbre creux (1) vers l'extrémité supérieure de la tige de commande (12), caractérisé en ce que l'autre extrémité est fixée à un point fixe situé sur ledit poteau (15).

4. Parapluie pliant selon la revendication 3 caractérisé en ce que l'extrémité inférieure du porteur (14) est mobile en se rapprochant et en s'éloignant dudit point fixe par l'intermédiaire d'un élément formant coulisseau pouvant se déplacer le long dudit poteau (15).

5. Groupe de parapluies pliants selon l'une quelconque des revendications précédentes, caractérisé en ce que les porteurs (14) sont agencés sur un poteau commun.

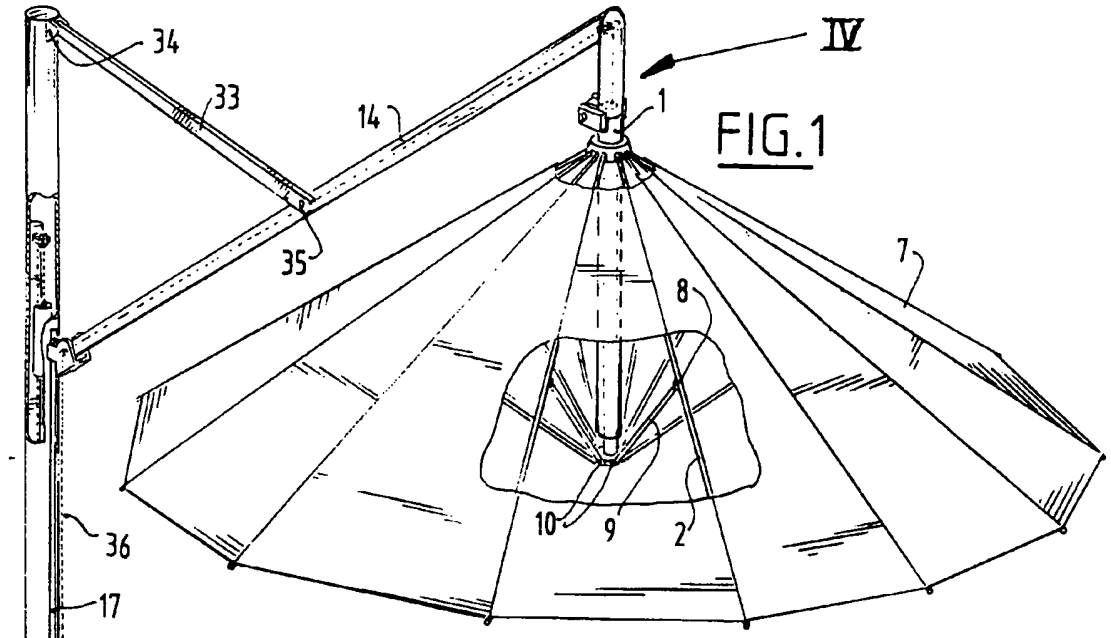

FIG.1

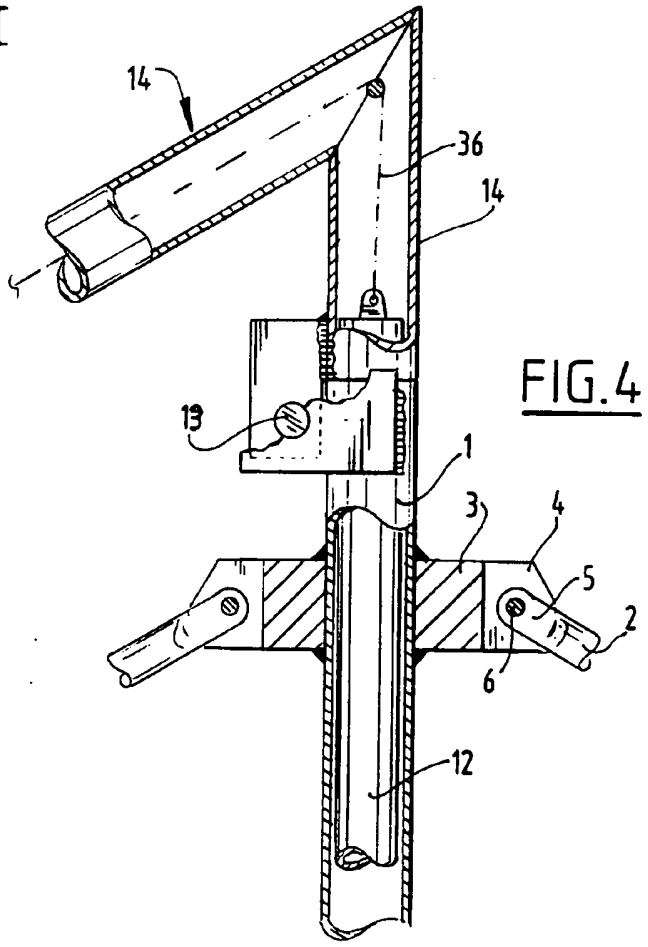

FIG.4

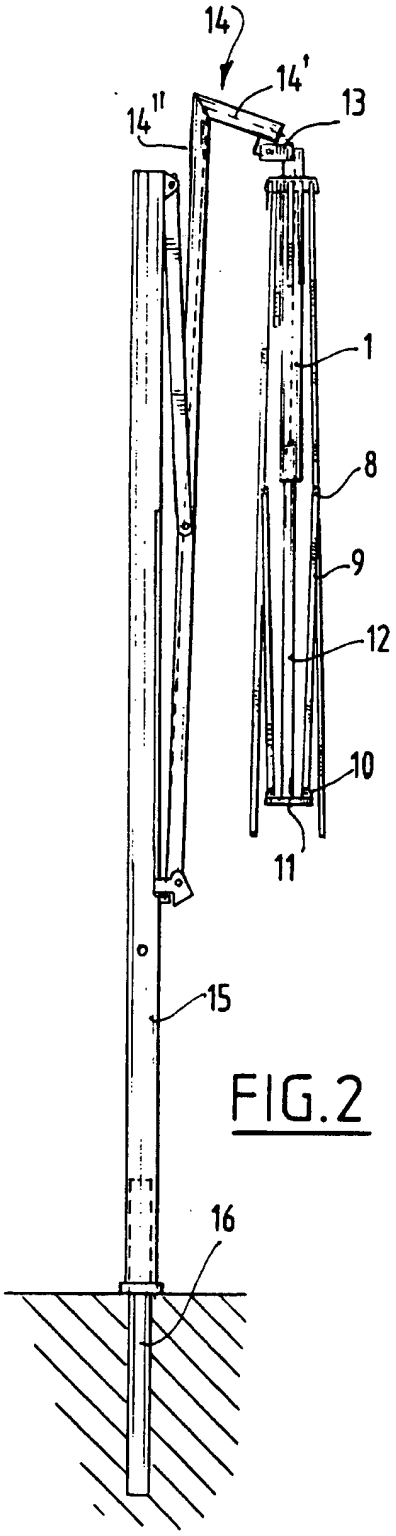

FIG.2

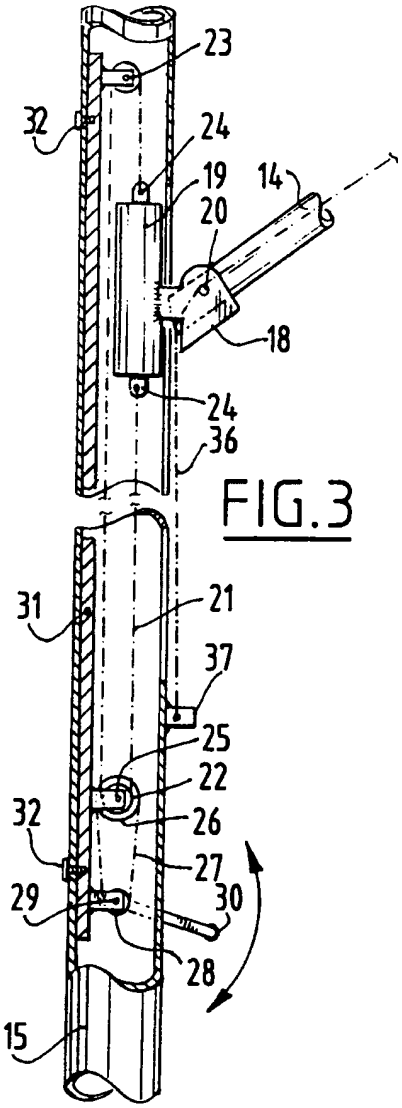

FIG.3

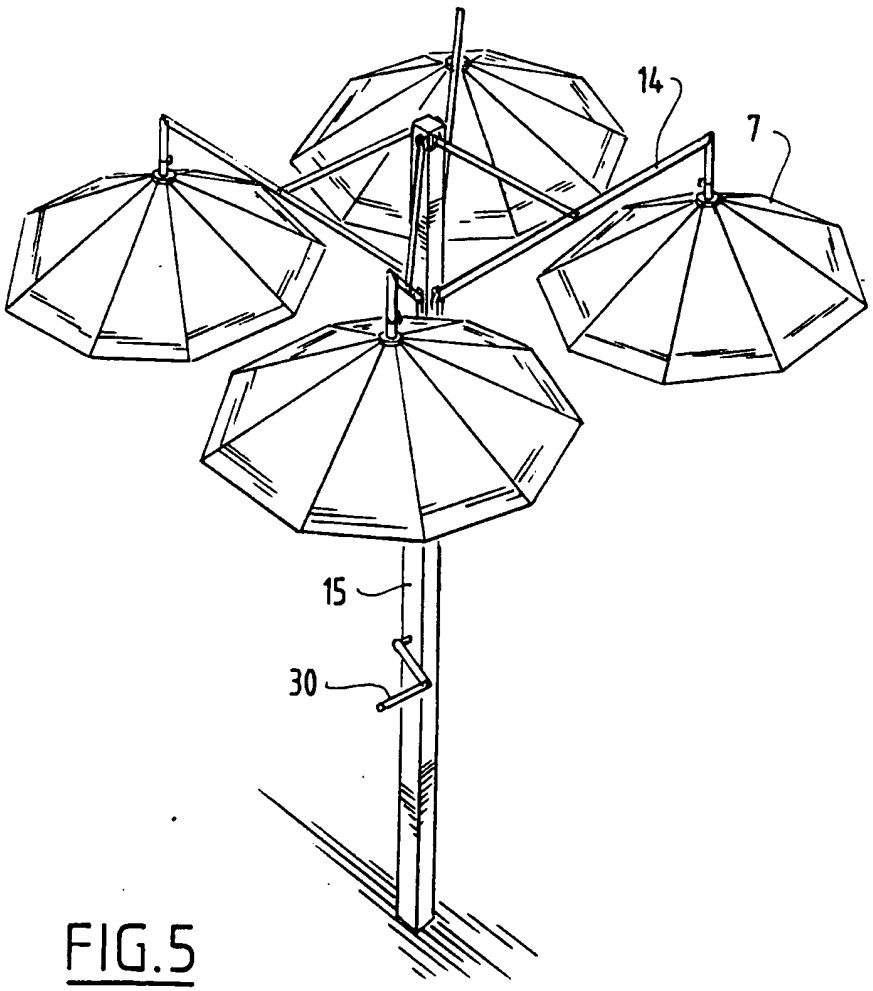

FIG.5